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20

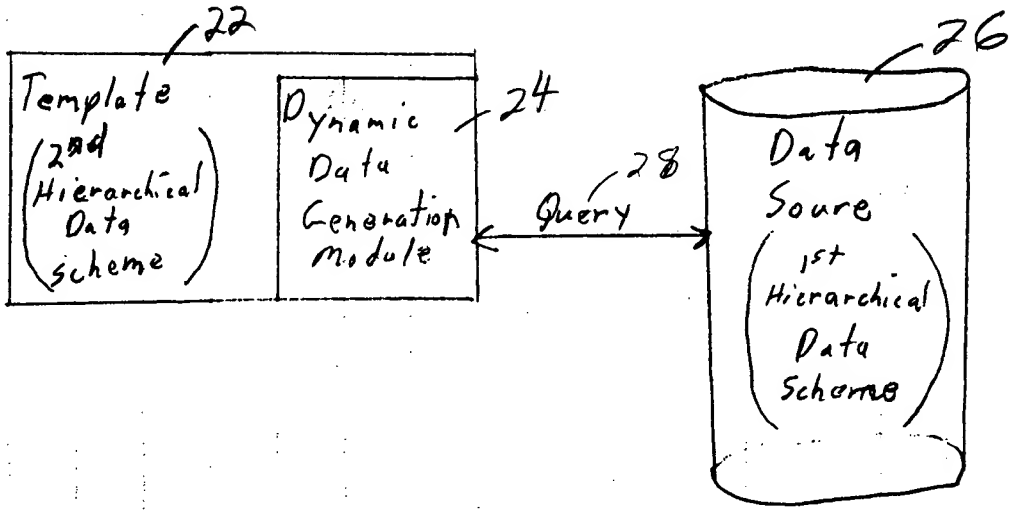

22
Template
(2nd Hierarchical Data scheme)
24
Dynamic Data Generation module
28
Query
26
Data Soure
(1st Hierarchical Data Scheme)

FIG. 1

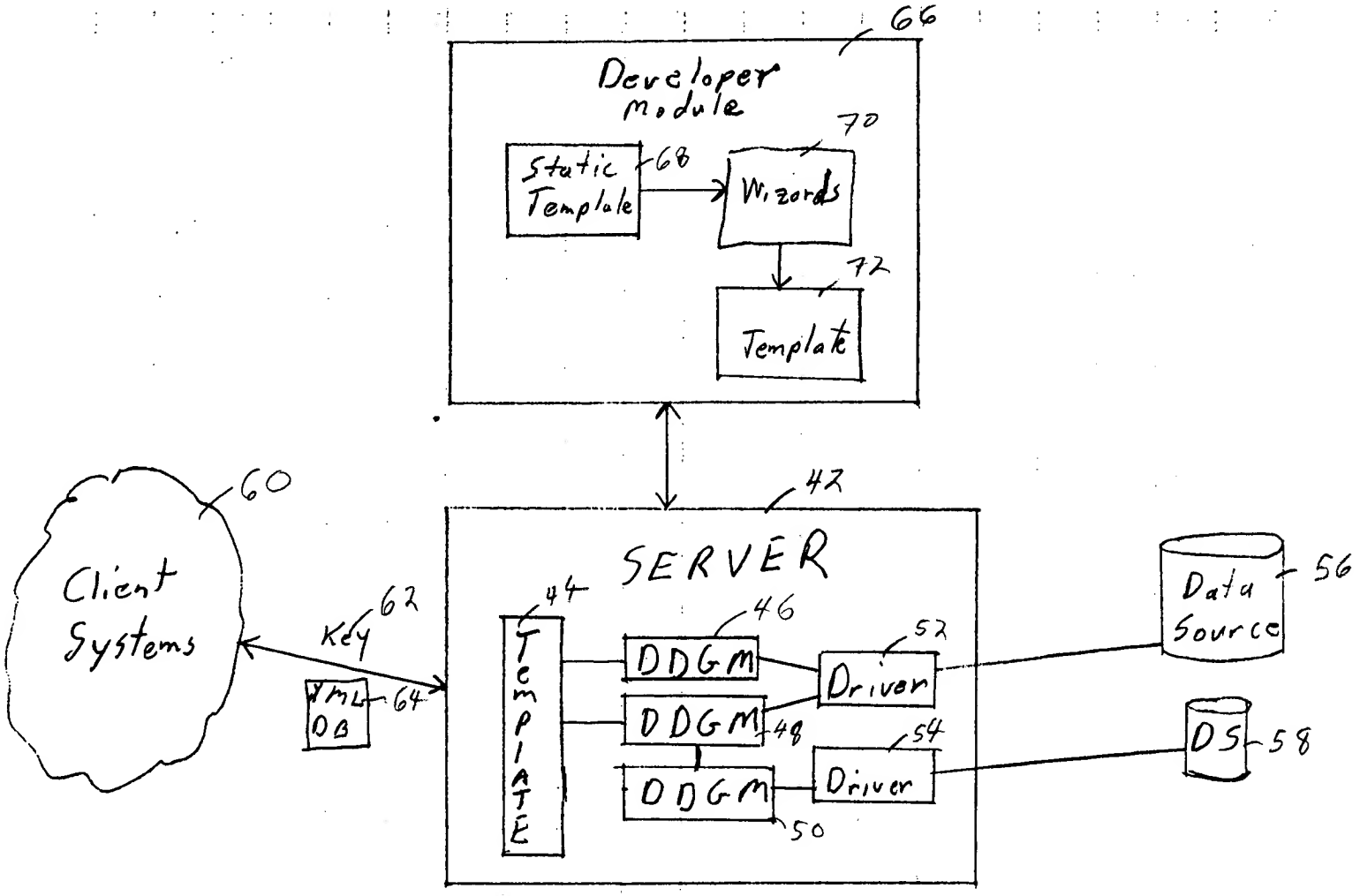

66
Developer module
70
Static Template
68
Wizards
72
Template
42
SERVER
60
Client Systems
62
Key
XML DB
64
44
TEMPLATE
46
DDGM
DDGM
48
DDGM
50
52
Driver
54
Driver
Data Source
56
DS
58

FIG. 2

EP 0 907 920 B1 20060628

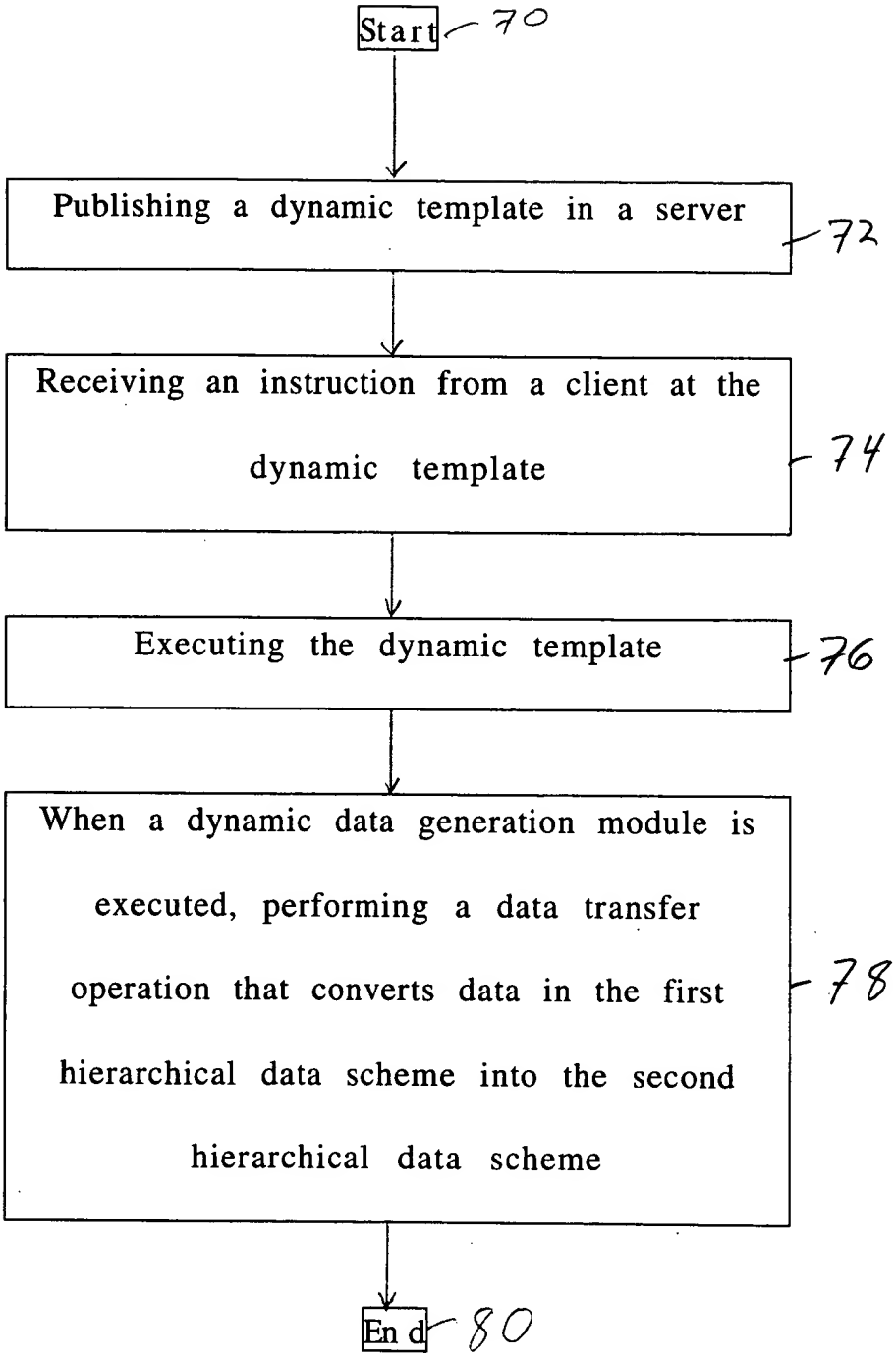


FIG. 3

FOSTER: 09008650

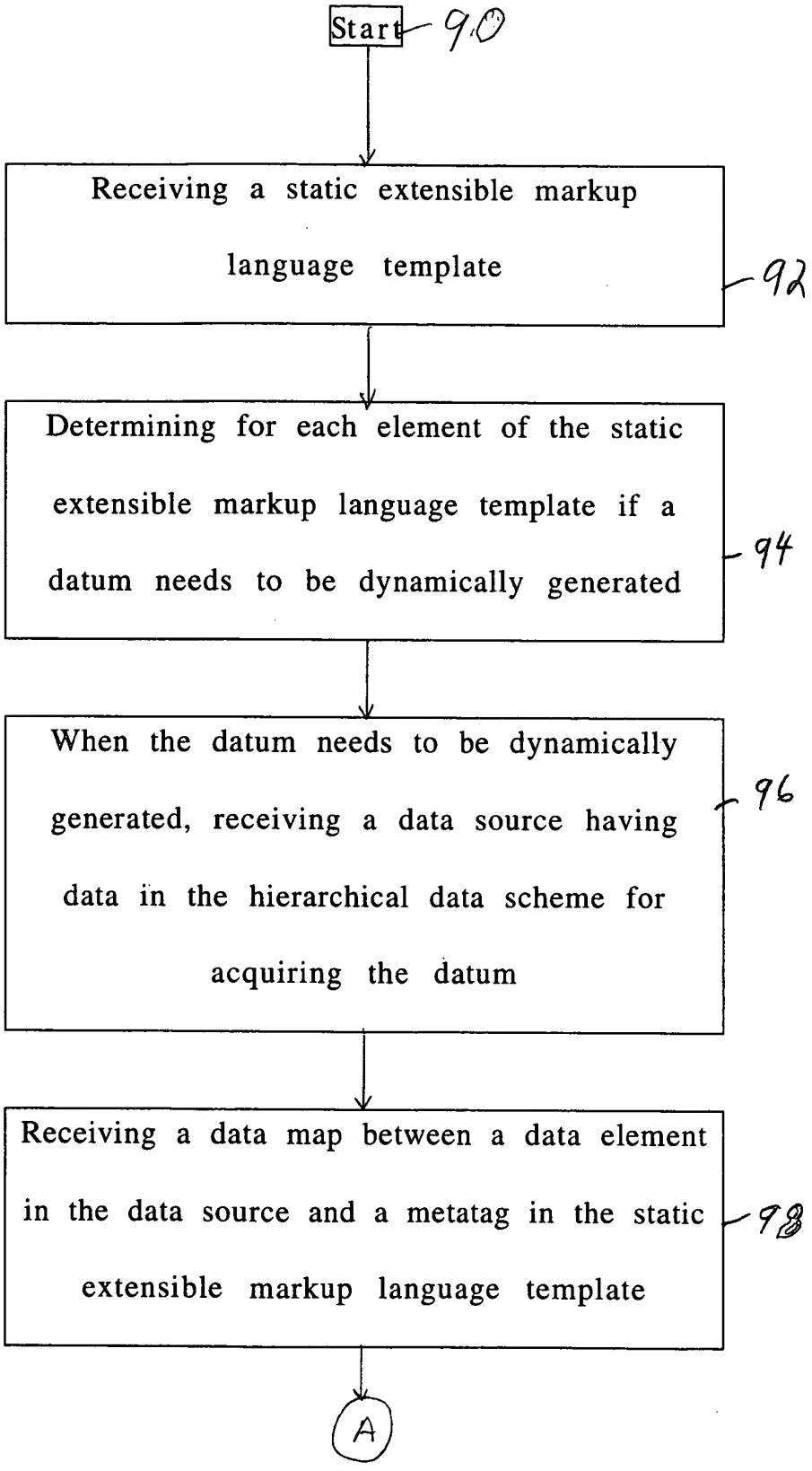


FIG. 4

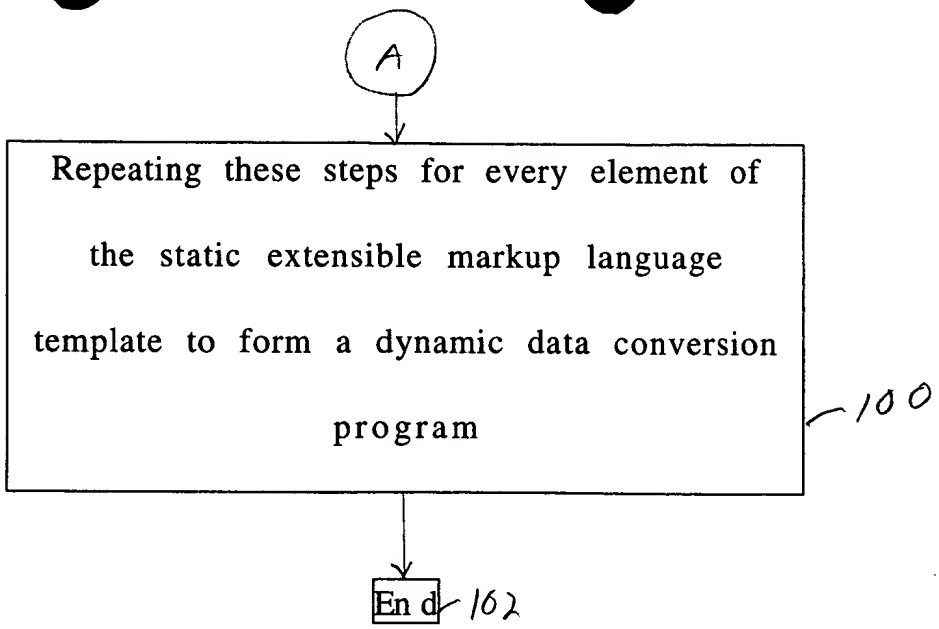

A
Repeating these steps for every element of the static extensible markup language template to form a dynamic data conversion program
100
End
102

FIG. 5

EP 0 970 569 B1

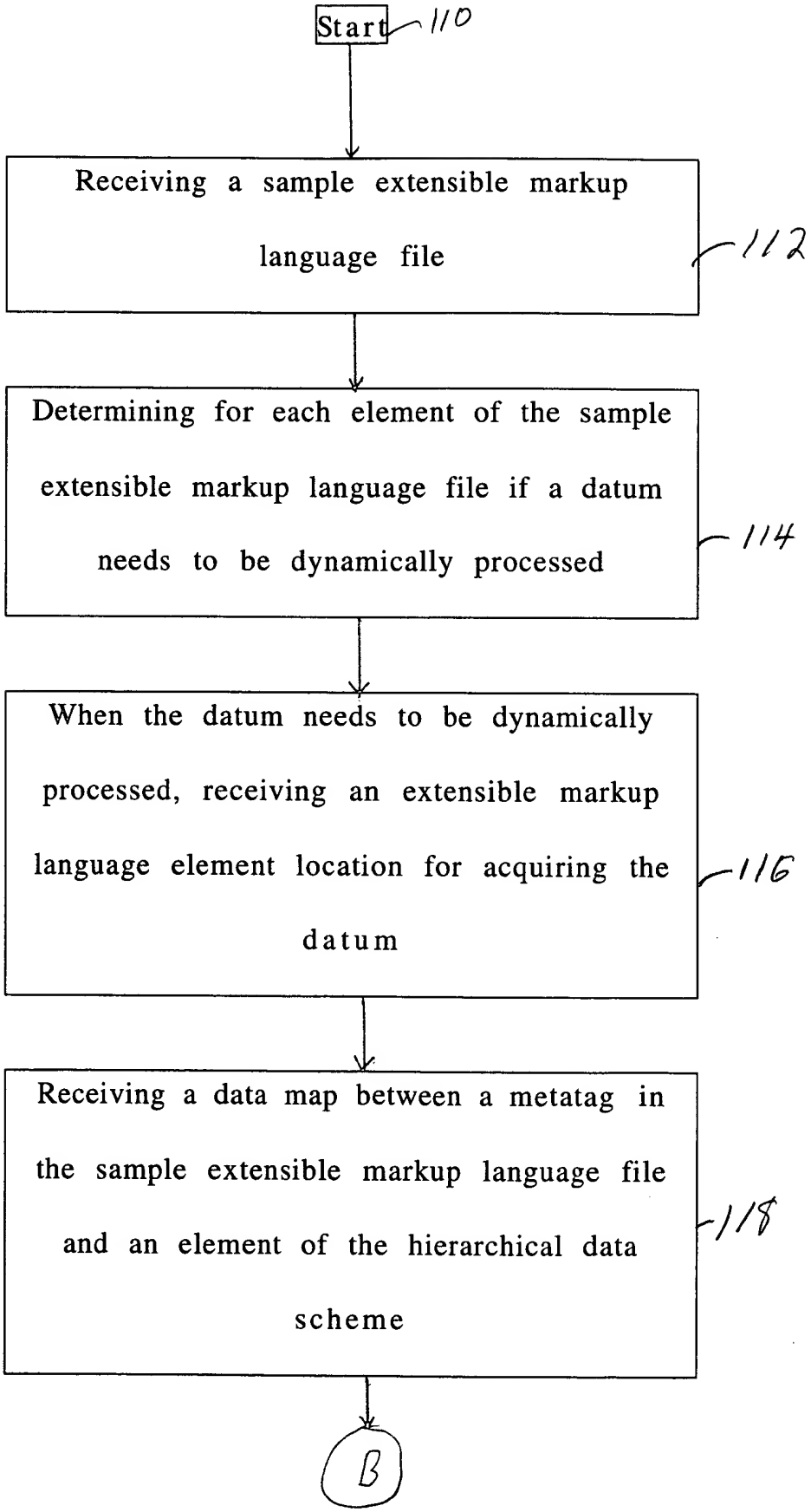


FIG. 6

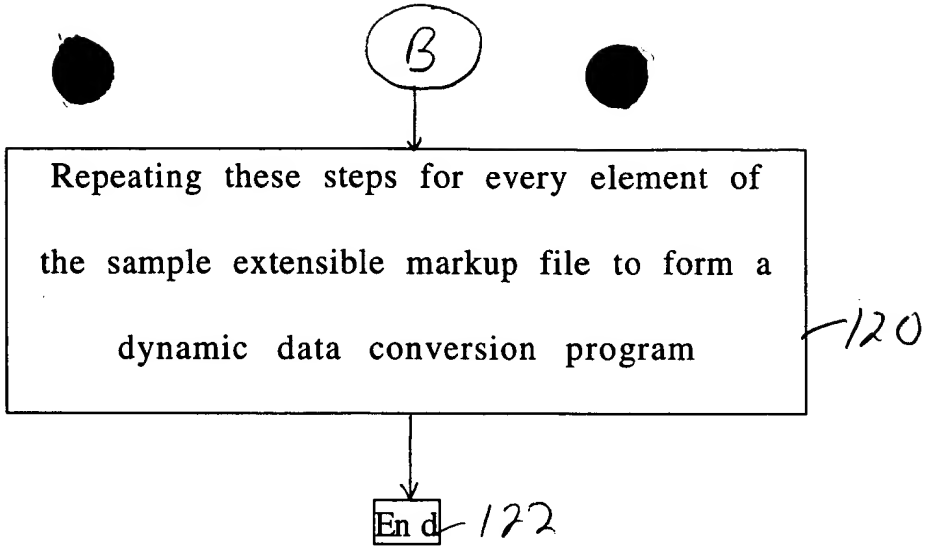

B
Repeating these steps for every element of the sample extensible markup file to form a dynamic data conversion program
120
End
122

FIG. 7

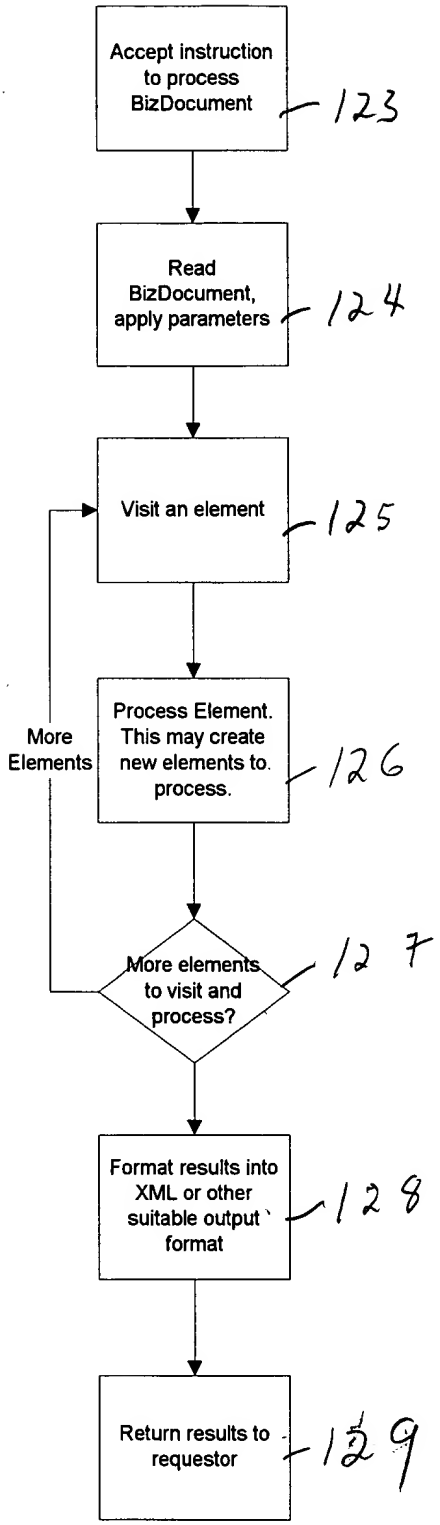

Accept instruction to process BizDocument
123
Read BizDocument, apply parameters
124
Visit an element
125
Process Element. This may create new elements to. process.
126
More Elements
More elements to visit and process?
127
Format results into XML or other suitable output format
128
Return results to requestor
129

FIG. 8

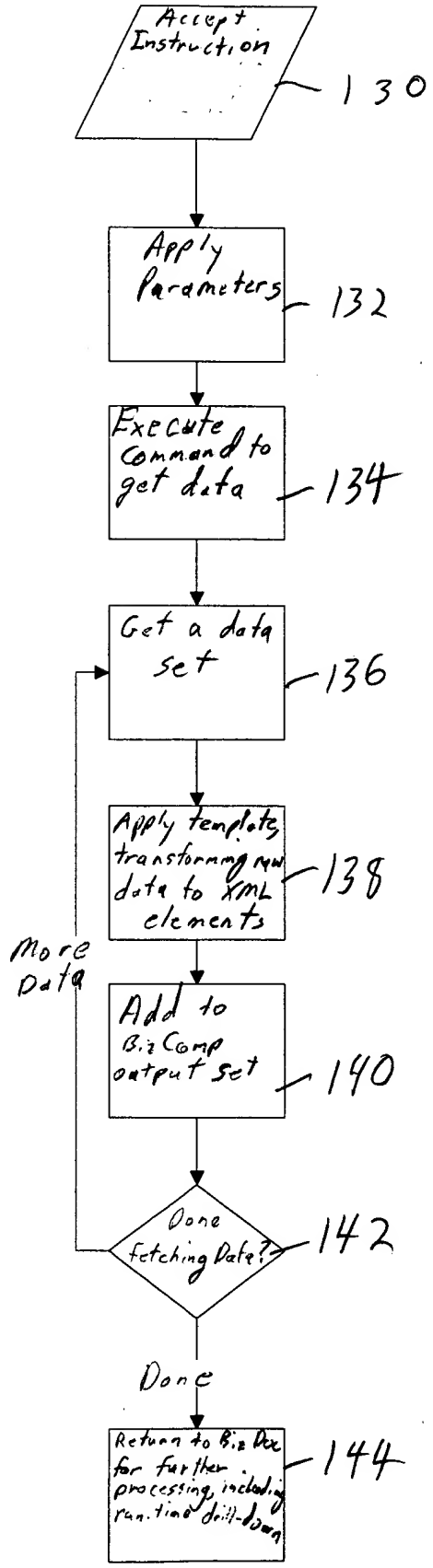

Accept Instruction
130
Apply Parameters
132
Execute command to get data
134
Get a data set
136
Apply template, transforming raw data to XML elements
138
More Data
Add to Biz Comp output set
140
Done fetching Data?
142
Done
Return to Biz Dox for further processing, including run-time drill-down
144

FIG. 9

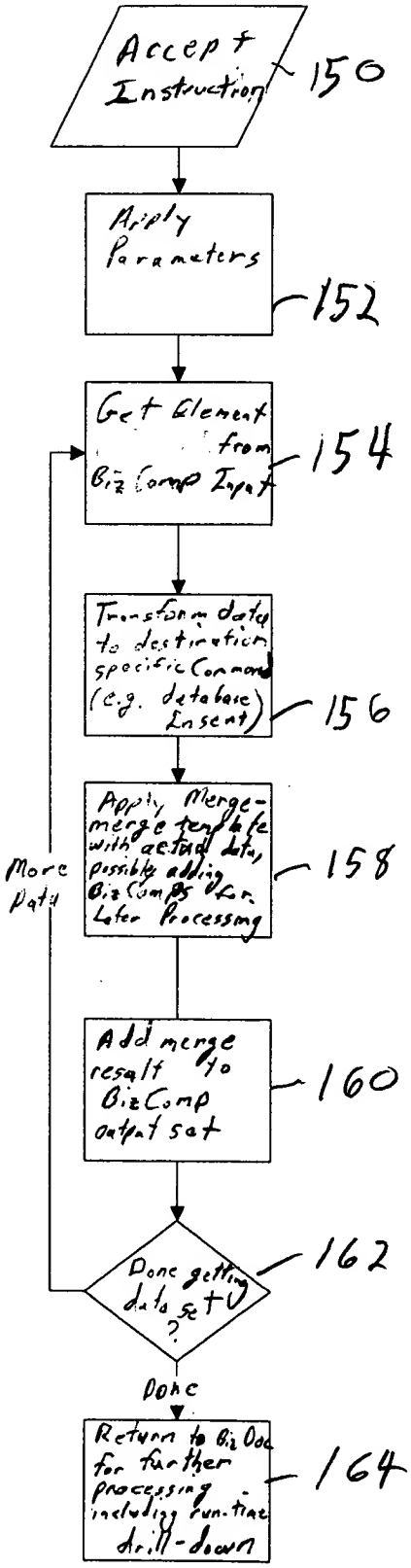

Accept Instruction
150
Apply Parameters
152
Get Element from Biz Comp Input
154
Transform data to destination specific Command (e.g. database Insert)
156
Apply Merge-merge template with actual data, possibly adding Biz Comp for Later Processing
158
More Data
Add merge result to Biz Comp output set
160
Done getting data set?
162
Done
Return to Biz Doc for further processing including run-time drill-down
164

FIG 10.

200

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE PurchaseOrderList SYSTEM "PurchaseOrderList.dtd">
<PurchaseOrderList>
  <PurchaseOrder PONumber="6080">
    <Header>
      <fromCust acct="CST1"/>
      <acctRep/>
      <OrigDate>6/13/2000</OrigDate>
      <RequiredDate>05/20/2000</RequiredDate>
    </Header>
    <ShipTo>
      <company>Simple Nutrition, Inc.</company>
      <address1>4585 Granby Cir</address1>
      <city>Colorado Springs</city>
      <stateProvince>CO</stateProvince>
      <country>USA</country>
      <postalCode>80919</postalCode>
    </ShipTo>
    <Items>
      <Item>
        <product>Tofu</product>
        <prodno>14</prodno>
        <unitprice>23.25</unitprice>
        <qty>2</qty>
        <discount>0.05</discount>
      </Item>
      <Item>
        <product>Chai</product>
        <prodno>1</prodno>
        <unitprice>18</unitprice>
        <qty>3</qty>
        <discount>0.10</discount>
      </Item>
    </Items>
  </PurchaseOrder>
</PurchaseOrderList>
```

FIG 11

210

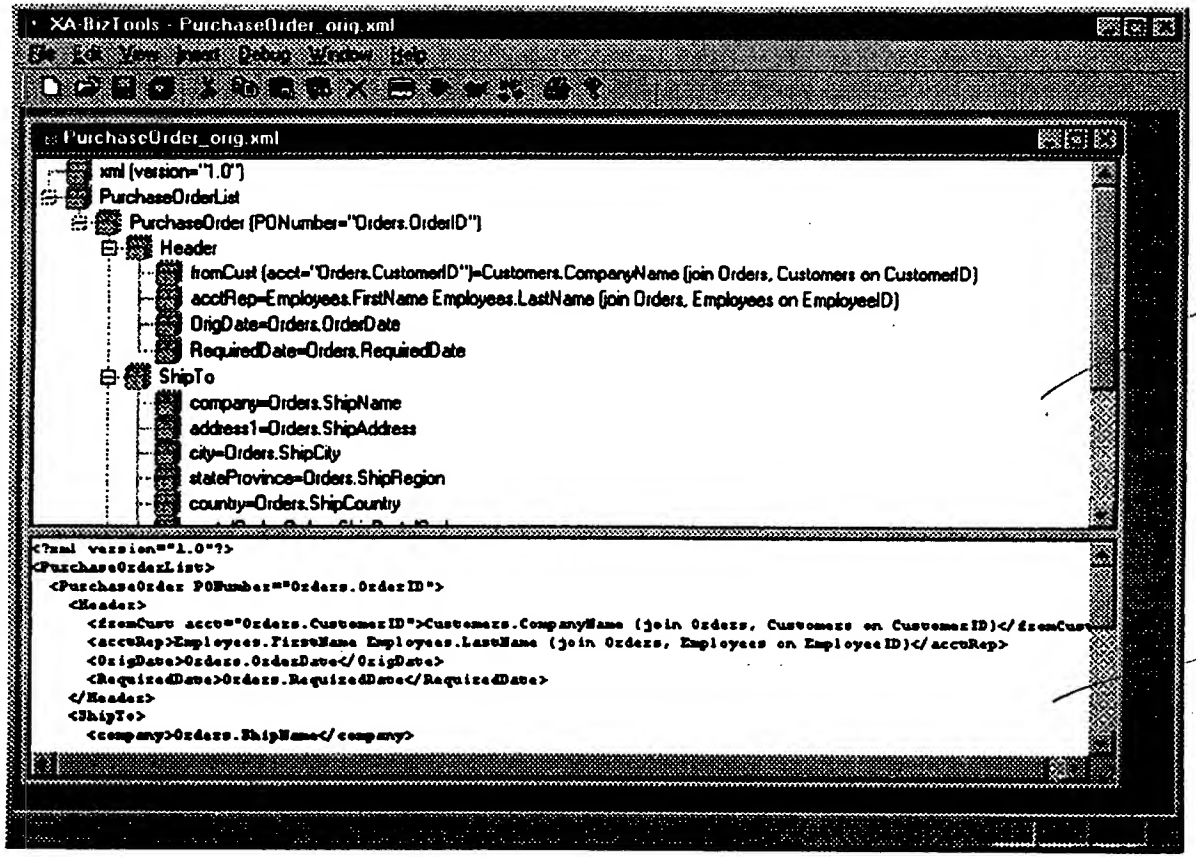

XA-BizTools - PurchaseOrder_orig.xml
File Edit View Insert Debug Window Help
PurchaseOrder_orig.xml
xml (version="1.0")
PurchaseOrderList
PurchaseOrder (PONumber="Orders.OrderID")
Header
fromCust (acct="Orders.CustomerID")=Customers.CompanyName (join Orders, Customers on CustomerID)
acctRep=Employees.FirstName Employees.LastName (join Orders, Employees on EmployeeID)
OrigDate=Orders.OrderDate
RequiredDate=Orders.RequiredDate
ShipTo
company=Orders.ShipName
address1=Orders.ShipAddress
city=Orders.ShipCity
stateProvince=Orders.ShipRegion
country=Orders.ShipCountry
<?xml version="1.0"?>
<PurchaseOrderList>
<PurchaseOrder PONumber="Orders.OrderID">
<Header>
<fromCust acct="Orders.CustomerID">Customers.CompanyName (join Orders, Customers on CustomerID)</fromCust
<acctRep>Employees.FirstName Employees.LastName (join Orders, Employees on EmployeeID)</acctRep>
<OrigDate>Orders.OrderDate</OrigDate>
<RequiredDate>Orders.RequiredDate</RequiredDate>
</Header>
<ShipTo>
<company>Orders.ShipName</company>
214
212

FIG. 12

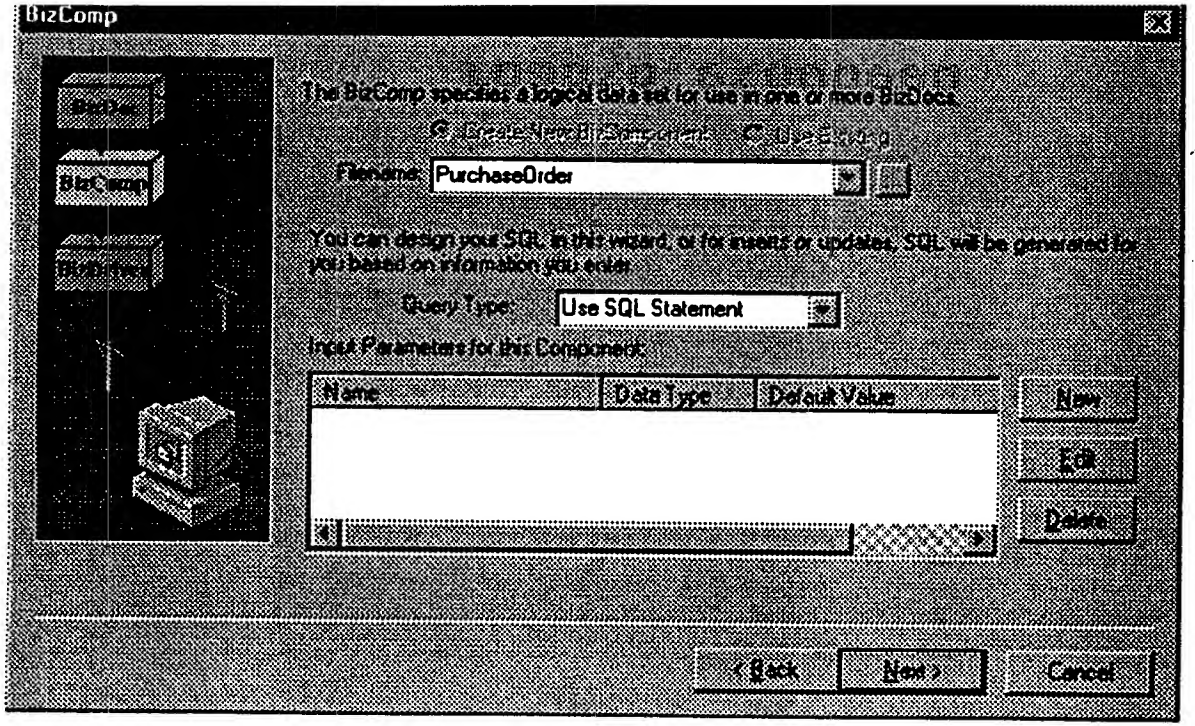
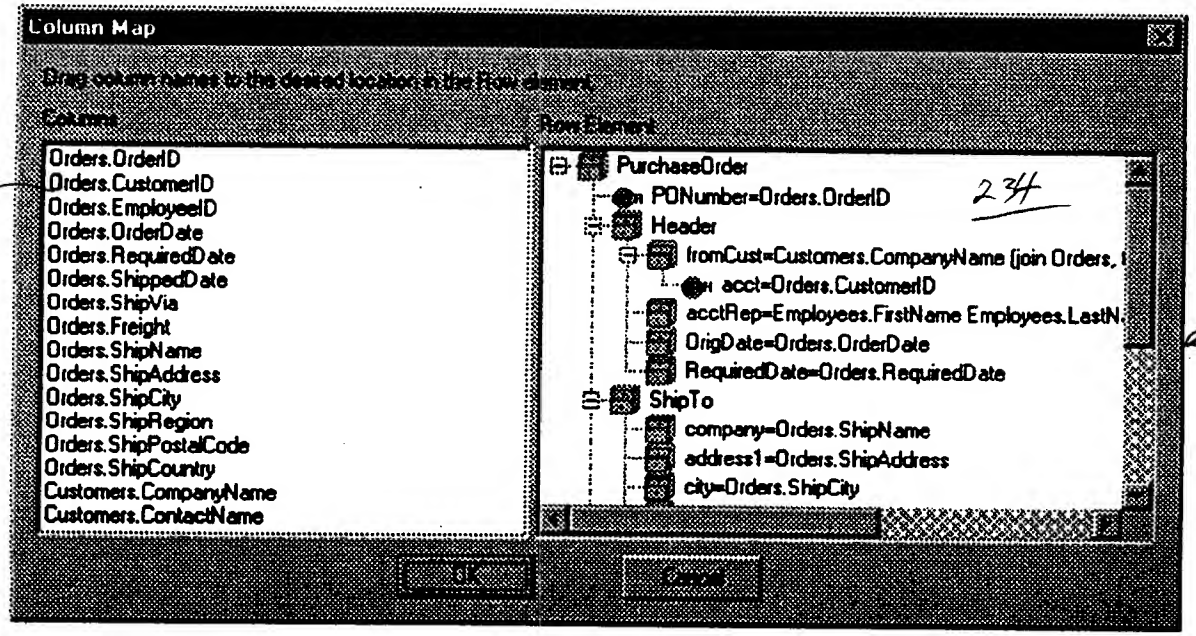


FIG. 13



13

FIG. 14

240

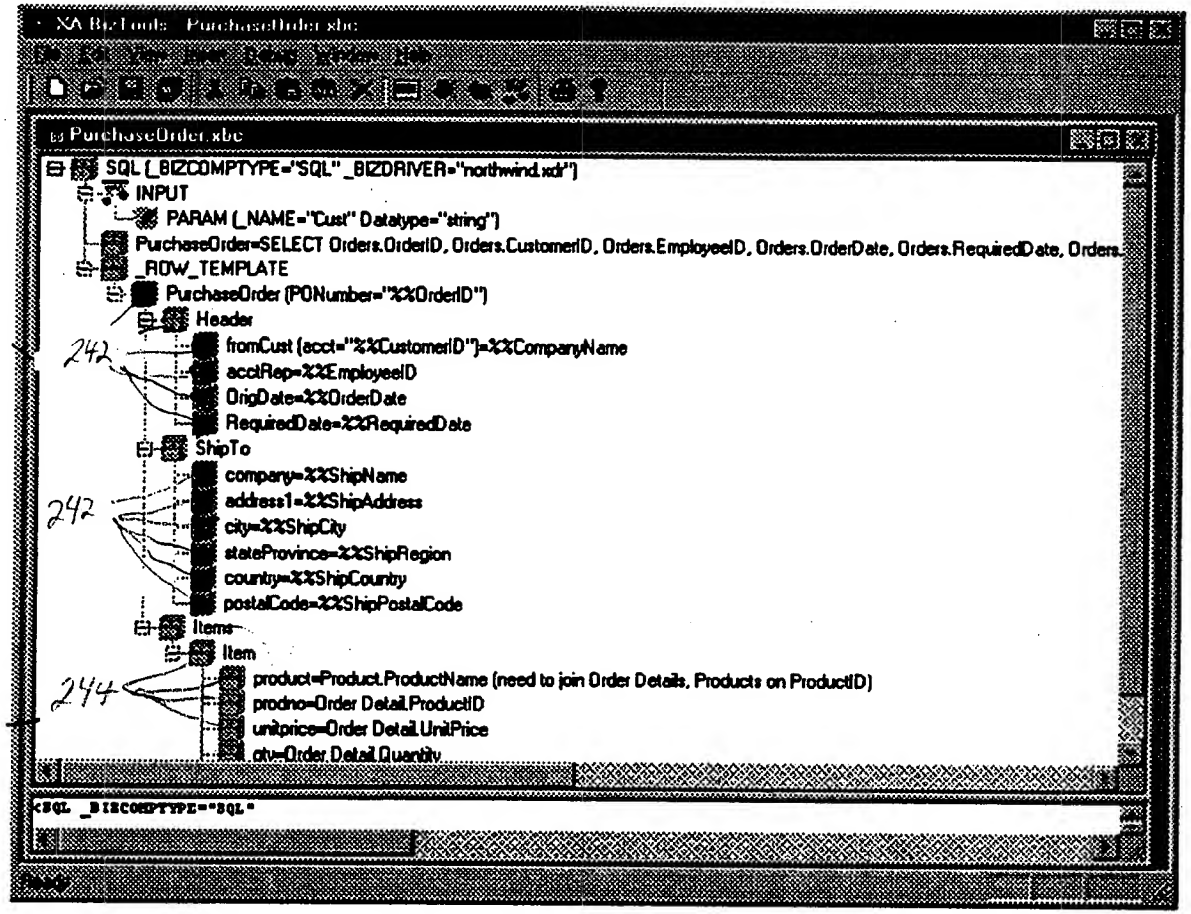

BizTools - PurchaseOrder.xbc
PurchaseOrder.xbc
SQL (_BIZCOMPTYPE="SQL" _BIZDRIVER="northwind.xdr")
INPUT
PARAM (_NAME="Cust" Datatype="string")
PurchaseOrder=SELECT Orders.OrderID, Orders.CustomerID, Orders.EmployeeID, Orders.OrderDate, Orders.RequiredDate, Orders.
_ROW_TEMPLATE
PurchaseOrder (PONumber="%%OrderID")
Header
fromCust (acct="%%CustomerID")=%%CompanyName
acctRep=%%EmployeeID
OrigDate=%%OrderDate
RequiredDate=%%RequiredDate
ShipTo
company=%%ShipName
address1=%%ShipAddress
city=%%ShipCity
stateProvince=%%ShipRegion
country=%%ShipCountry
postalCode=%%ShipPostalCode
Items
Item
product=Product.ProductName (need to join Order Details, Products on ProductID)
prodno=Order Detail.ProductID
unitprice=Order Detail.UnitPrice
qty=Order Detail.Quantity
242
242
244
<SQL _BIZCOMPTYPE="SQL"
Ready

FIG 15